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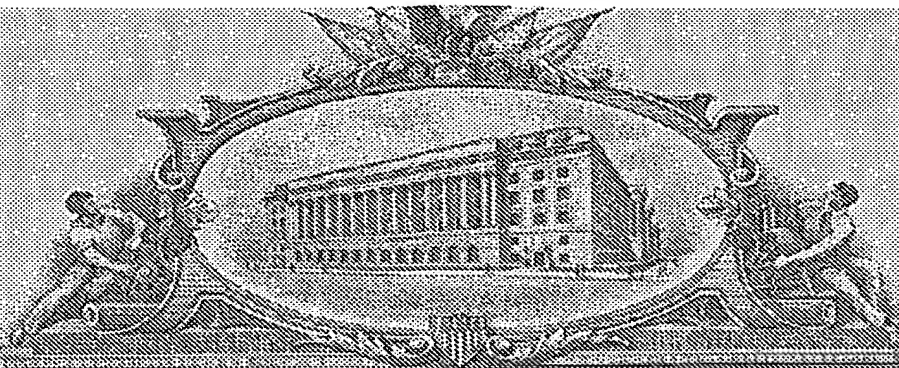
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TRANSMITTAL OF NEW
PROVISIONAL APPLICATION
VIA EXPRESS MAIL NO.:

EL 943632891US

Box Provisional Patent Application
To The Honorable Commissioner
of Patents and Trademarks
Washington, D.C. 20231

Re: New U.S. Provisional Patent Application of: SOUKUP, Michael for his
"BUTTERFLY WING LAMINATION PROCESS AND METHOD OF
USE"; filed: herewith (June 6, 2003); Serial No. To be assigned.

Dear Sir:

Transmitted herewith for filing is the above-referenced provisional patent
application. Enclosed are:

1. New provisional patent application; 18 pages total of specification including 3
pages of drawing.
2. One (1) verified statement claiming small entity status (37CFR §1.27(a) and 1.27(c)(1) -
Independent Inventor.
3. Our check No. 3547 in the amount of \$80.00 (small entity) to cover filing.
4. Our post card. Please date stamp and return.

Please charge any unanticipated fees to our Deposit Account No. 03-3565 (a
duplicate copy of this charge authorization is attached.)

Respectfully submitted,

06/06/03

Date

Royal W. Craig
Attorney for Applicant
Reg. No. 34145

I HEREBY CERTIFY that on June 6, 2003, one copy of the above-referenced documents were
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and Trademark Office.

60476453.060603

PROVISIONAL APPLICATION FOR UNITED STATES PATENT

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Invention: BUTTERFLY WING LAMINATION PROCESS AND METHOD OF USE

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5 **BUTTERFLY WING LAMINATION PROCESS AND METHOD OF USE**

BACKGROUND OF THE INVENTION

1. Field of the invention

10 The present invention relates to lamination processes and, more particularly, to a process for laminating butterfly wings, and even more particularly, to the use of laminated butterfly wings in a variety of jewelry types and other craftwork.

2. Description of the Background

15 Traditional jewelry is typically fabricated of one or more precious metals (e.g. silver, gold, platinum), or the combination of one or more precious metals and one or more precious minerals/stones such as diamonds, sapphires, rubies, etc. The combination and final shape/configuration of the metals and minerals/stones are generally chosen with the intention of providing the jewelry with a significant degree of visual appeal. The process of jewelry design has resulted in thousands of shape and color combinations

20 Many of the man-made combinations of shapes and colors found in jewelry designs are intended to mimic, or replicate, an object found in nature. While many naturally occurring objects can only be mimicked because they are physically too large or heavy for actual use in jewelry, one type of object that could actually be utilized in jewelry design/construction is the butterfly wing. Butterfly wings are not too large or too heavy, and are available in a variety of
25 striking shapes, colors, and patterns.

5 Unfortunately, they are also too fragile to be used without being subjected to some form of strengthening and/or preservation. This is because butterfly wings are covered by tiny “scales” that are very similar to those found on fish. The scales provide the colors and patterns for the wings. However, the scales are easily removed when the wings are rubbed (i.e. resulting in the “dust” that is generated by the handling of butterfly wings). If used in jewelry without
10 some process for preservation, the colors/patterns would be easily and quickly removed during normal handling.

 To the best of the knowledge of the present inventor, no prior method for the strengthening/preservation of butterfly wings, for the purpose of using them in various jewelry and other craftwork designs, exists. Consequently, it would thus be greatly advantageous to
15 provide a lamination process that (1) preserves the naturally occurring colors and patterns found in butterfly wings, (2) results in a strong, durable finished good that may be incorporated in the design and manufacture of jewelry that is worn externally on the body and exposed to a wide variety of environments and weather conditions, and (3) is readily and economically performed to provide for repeated use.

SUMMARY OF THE INVENTION

20 It is, therefore, the primary object of the present invention to provide a process for the lamination of butterfly wings for the purpose of strengthening/preserving them to facilitate their use in jewelry and other craftwork design and construction.

25 A further object of the present invention is to provide a process for the lamination of butterfly wings that preserves the naturally occurring colors and patterns.

5 It is another object of the present invention to provide a process for the lamination of butterfly wings that uses strong, durable, lightweight materials.

 An additional object of the present invention is to provide a process for the lamination of butterfly wings that is readily and economically performed to provide for repeated use.

 According to the present invention, the above-described and other objects are
10 accomplished by a multi-layer lamination process typically comprising a series of sixteen steps and the use of at least four materials/mixtures. The process steps include (1) the mixing of a liquid plastic, (2) the application of a layer of the liquid plastic to a sheet of mylar, (3) affixing a butterfly wing to the liquid plastic/mylar sheet combination, (4) allowing the layer of liquid plastic to dry, (5) the application of a layer of fixative to the exposed side of the butterfly wing,
15 (6) allowing the layer of fixative to dry, (7) the application of a first layer of clear lacquer over the fixative, (8) allowing the first layer of lacquer to dry, (9) cutting along the outer perimeter of the butterfly wing to separate the wing from the remainder of the mylar sheet, (10) smoothing the edges of the cut-out butterfly wing, (11) the application of a second layer of clear lacquer over the first layer, (12) allowing the second layer of lacquer to dry, (13) the application of a
20 third layer of clear lacquer over the second layer, (14) allowing the third layer of lacquer to dry, (15) the drilling of a hole through one end of the laminated butterfly wing, and (16) the affixing of a bail to the hole. An alternative embodiment, utilized with extremely fragile butterfly wing variations, adds two steps prior to step (1) above. These additional steps include (a) the affixing of a butterfly wing to a first sheet of self-adhesive, ultra-thin mylar and (b) the affixing of a
25 second sheet of self-adhesive, ultra-thin mylar onto the exposed side of the butterfly wing. The above processes for the lamination of butterfly wings use strong, durable, lightweight materials

5 and may be readily and economically performed to provide for repeated use. When utilized in conjunction with a butterfly wing, the process results in a multi-layered lamination that strengthens and preserves the wing's naturally occurring colors and patterns.

BRIEF DESCRIPTION OF THE DRAWINGS

10 Other objects, features, and advantages of the present invention will become more apparent from the following detailed description of the preferred embodiment and certain modifications thereof when taken together with the accompanying drawings in which:

FIG. 1 is a top perspective view of a laminated butterfly wing 10, 50 of the present invention.

15 FIG. 2 is a cross-sectional view of the laminated butterfly wing 10 according to a preferred embodiment of the present invention.

FIG. 3 is a cross-sectional view of a laminated butterfly wing 50 according to an alternative embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

20 The present invention is a butterfly wing lamination process for the purpose of strengthening and/or preserving them to facilitate their use in jewelry design and construction. FIG. 1 is a top perspective view of a laminated butterfly wing 10, 50 in accordance with both embodiments of the present invention. FIG. 2 is a cross-sectional view of a butterfly wing 10
25 according to the preferred embodiment of the present invention showing the seven laminated

5 layers created by the process. The preferred process typically includes a series of sixteen steps and the use of four materials/mixtures.

The first process step of the preferred embodiment of the present invention is the mixing of a liquid plastic. The liquid plastic is preferably a two-part mixture including a resin and a hardener. An example of a suitable two-part mixture is the Castin' Craft Clear Liquid Plastic Casting Resin commercially available from ETL of Fields Landing, CA. However, other
10 resin/hardener mixtures possessing, for example, similar degrees of clarity and rigidity may also be utilized.

The second process step is the application of a layer 14 of the liquid plastic to a sheet of commercially-available mylar 12. The plastic layer 14 is preferably applied to the mylar sheet
15 12 by first pouring an appropriate amount of the liquid onto the sheet 12 (which is preferably lying flat on a horizontal surface) and then spreading the liquid to a substantially uniform thickness using a commercially available leveling stick.

The third process step is the affixing of an actual butterfly wing 16 to the layer 14 of liquid plastic on the mylar sheet 12. The butterfly wing 16 is preferably laid upon the layer 14 of
20 plastic, and gently tamped down, just as the layer 14 begins to dry. This step serves to seal one side of the wing 16 behind the plastic layer 14 and mylar sheet 12.

The fourth process step is the drying of the layer 14 of liquid plastic. In general, a period of eight to twelve hours is allowed to pass in order to provide sufficient time for the layer 14 to dry completely. However, a longer or shorter period of time may be required for materials other
25 than the Castin' Craft Clear Liquid Plastic Casting Resin.

5 The fifth process step is the application of a layer 18 of fixative to the exposed side of the butterfly wing 16. The fixative layer 18 is preferably sprayed onto the exposed side of the wing 16 so as to not disturb the wing's color and pattern producing "scales". The fixative layer 18 serves to hold the scales in position during the balance of the lamination process. An example of a suitable fixative is the Paul Mitchell Finish Super Clean Spray commercially available from
10 John Paul Mitchell Systems of Beverly Hills, CA. However, other fixatives possessing, for example, similar degrees of clarity and bonding strength may also be utilized.

 The sixth process step is the drying of the fixative layer 18. In general, a period of twenty minutes is allowed to pass in order to provide sufficient time for the layer 18 to dry completely. However, a longer or shorter period of time may be required for materials other
15 than the Paul Mitchell Finish Super Clean Spray.

 The seventh process step is the application of a first layer 20 of clear lacquer over the fixative layer 18. The clear lacquer layer 20 is preferably applied using a commercially available paint brush. The clear lacquer layer 20 may be applied over the entire butterfly wing 16, or it may be applied only to certain areas of the wing 16. An example of a suitable clear
20 lacquer is the Treasure Crystal Coat commercially available from Plaid Enterprises of Norcross, GA. However, other clear lacquers possessing, for example, similar degrees of clarity and durability may also be utilized.

 The eighth process step is the drying of the first layer 20 of clear lacquer. In general, a period of twelve hours is allowed to pass in order to provide sufficient time for the layer 20 to
25 dry completely. However, a longer or shorter period of time may be required for materials other than the Treasure Crystal Coat.

5 The ninth process step is cutting along the outer perimeter of the butterfly wing 16 to separate the wing 16 from the remainder of the mylar sheet 12. This step is preferably accomplished via the use of a commercially available pair of shears.

 The tenth process step is the smoothing of the edges of the cut-out, partially laminated butterfly wing 16 (i.e. including the mylar sheet 12, the layer of plastic 14, the layer of fixative
10 18, and the first layer of lacquer 20). This step is preferably accomplished via the use of a commercially available sanding device such as a Dremel rotary tool equipped with an appropriate, fine grit sanding head.

 The eleventh process step is the application of a second layer 22 of clear lacquer over the first layer 20. As in the seventh step above, the clear lacquer layer 22 is preferably applied using
15 a commercially available paint brush. Once again, an example of a suitable clear lacquer is the Treasure Crystal Coat, however, other clear lacquers possessing similar characteristics may also be utilized.

 The twelfth process step is the drying of the second layer 22 of clear lacquer. In general, a period of twelve hours is allowed to pass in order to provide sufficient time for the layer 22 to
20 dry completely. However, a longer or shorter period of time may be required for materials other than the Treasure Crystal Coat.

 The thirteenth process step is the application of a third layer 24 of clear lacquer over the second layer 22. As in the seventh and eleventh steps above, the clear lacquer layer 24 is preferably applied using a commercially available paint brush. Once again, an example of a
25 suitable clear lacquer is the Treasure Crystal Coat, however, other clear lacquers possessing similar characteristics may also be utilized.

5 The fourteenth process step is the drying of the third layer 24 of clear lacquer. In general, a period of twelve hours is allowed to pass in order to provide sufficient time for the layer 24 to dry completely. However, a longer or shorter period of time may be required for materials other than the Treasure Crystal Coat.

10 The fifteenth process step is the drilling of a hole 30 (see FIG. 1) through one end of the laminated butterfly wing 10. This step is preferably accomplished via the use of a commercially available drilling unit such as a Dremel rotary tool equipped with an appropriate drill bit.

15 The sixteenth, and final, process step is the affixing of a commercially-available bail 40 (see again FIG. 1) to the hole 30 in the laminated butterfly wing 10. The bail 30 facilitates the connection of the laminated butterfly wing 10 to all manner of jewelry mounts such as earrings, necklaces, wine glass charms, etc.

20 An alternative embodiment of the present invention is preferably used to strengthen and preserve extremely fragile butterfly wings (i.e. those with scales that are very, very delicate and removed by the lightest of contact). FIG. 3 is a cross-sectional view of a butterfly wing 50 according to an alternative embodiment of the present invention showing the nine laminated layers created by the process. The alternative process typically includes a series of eighteen steps and the use of five materials/mixtures.

25 The first process step of the alternative embodiment of the present invention is the affixing of an actual butterfly wing 58 to a first sheet of commercially-available, self-adhesive, ultra-thin mylar 56. The butterfly wing 58 is preferably laid upon the first sheet of mylar 56 and gently tamped down. This step serves to seal one side of the wing 58 behind the first mylar sheet 56.

5 The second process step is the affixing of a second sheet of commercially-available, self-adhesive, ultra-thin mylar 60 to the exposed side of the butterfly wing 58. The second mylar sheet 60 is preferably affixed onto the exposed side of the wing 16 so as to not disturb the wing's color and pattern producing "scales". The mylar sheets 56, 60 serve to seal and hold the scales in position during the balance of the lamination process.

10 The third process step is the mixing of a liquid plastic. The liquid plastic is preferably a two-part mixture including a resin and a hardener. An example of a suitable two-part mixture is the Castin' Craft Clear Liquid Plastic Casting Resin commercially available from ETI of Fields Landing, CA. However, other resin/hardener mixtures possessing, for example, similar degrees of clarity and rigidity may also be utilized.

15 The fourth process step is the application of a layer 14 of the liquid plastic to a sheet of commercially-available mylar 12. The liquid plastic layer 14 is preferably applied to the mylar sheet 12 by first pouring an appropriate amount of the liquid onto the sheet 12 (which is preferably lying flat on a horizontal surface) and then spreading the liquid to a substantially uniform thickness using a commercially available leveling stick.

20 The fifth process step is the affixing of the first ultra-thin mylar sheet 56 to the layer 14 of liquid plastic on the mylar sheet 12. This step also serves to affix the wing 58 and second ultra-thin mylar sheet 60 to the layer 14 of liquid plastic. The mylar sheet 56 is preferably laid upon the layer 14 of plastic, and gently tamped down, just as the layer 14 begins to dry.

25 The sixth process step is the drying of the layer 14 of liquid plastic. In general, a period of eight to twelve hours is allowed to pass in order to provide sufficient time for the layer 14 to

5 dry completely. However, a longer or shorter period of time may be required for materials other than the Castin' Craft Clear Liquid Plastic Casting Resin.

8 The seventh process step is the application of a layer 18 of fixative to the second ultra-thin mylar sheet 60. The fixative layer 18 is preferably sprayed onto the mylar sheet 60. An example of a suitable fixative is the Paul Mitchell Finish Super Clean Spray commercially
10 available from John Paul Mitchell Systems of Beverly Hills, CA. However, other fixatives possessing, for example, similar degrees of clarity and bonding strength may also be utilized.

15 The eighth process step is the drying of the fixative layer 18. In general, a period of twenty minutes is allowed to pass in order to provide sufficient time for the layer 18 to dry completely. However, a longer or shorter period of time may be required for materials other than the Paul Mitchell Finish Super Clean Spray.

20 The ninth process step is the application of a first layer 20 of clear lacquer over the entire fixative layer 18. The clear lacquer layer 20 is preferably applied using a commercially available paint brush. An example of a suitable clear lacquer is the Treasure Crystal Coat commercially available from Plaid Enterprises of Norcross, GA. However, other clear lacquers possessing, for example, similar degrees of clarity and durability may also be utilized.

 The tenth process step is the drying of the first layer 20 of clear lacquer. In general, a period of twelve hours is allowed to pass in order to provide sufficient time for the layer 20 to dry completely. However, a longer or shorter period of time may be required for materials other than the Treasure Crystal Coat.

5 The eleventh process step is cutting along the outer perimeter of the butterfly wing 58 to separate the wing 58 from the remainder of the mylar sheets 12, 56, 60. This step is preferably accomplished via the use of a commercially available pair of shears.

10 The twelfth process step is the smoothing of the edges of the cut-out, partially laminated butterfly wing 58 (i.e. including the mylar sheets 12, 56, 60, the layer of plastic 14, the layer of fixative 18, and the first layer of lacquer 20). This step is preferably accomplished via the use of a commercially available sanding device such as a Dremel rotary tool equipped with an appropriate, fine grit sanding head.

 Steps thirteen through sixteen of this alternative embodiment are, respectively, exact duplicates of steps eleven through fourteen of the preferred embodiment described above.

15 The seventeenth process step is the drilling of a hole 30 (see FIG. 1) through one end of the laminated butterfly wing 50. This step is preferably accomplished via the use of a commercially available drilling unit such as a Dremel rotary tool equipped with an appropriate drill bit.

20 The eighteenth, and final, process step is the affixing of a commercially-available bail 40 (see again FIG. 1) to the hole 30 in the laminated butterfly wing 50. The bail 30 facilitates the connection of the laminated butterfly wing 50 to all manner of jewelry mounts such as earrings, necklaces, wine glass charms, etc.

 As is readily evident, the above processes for the lamination of butterfly wings use strong, durable, lightweight materials and may be readily and economically performed to provide for repeated use. When utilized in conjunction with a butterfly wing, the process results

25

5 in a multi-layered lamination that strengthens and preserves the wing's naturally occurring colors and patterns and facilitates its use in all manner of jewelry.

Having now fully set forth the preferred embodiments and certain modifications of the concept underlying the present invention, various other embodiments as well as certain variations and modifications of the embodiments herein shown and described will obviously occur to those skilled in the art upon becoming familiar with said underlying concept. It is to be understood, therefore, that the invention may be practiced otherwise than as specifically set forth in the appended claims.

10

5 I claim:

1. A lamination process for butterfly wings, comprising the steps of:

mixing a liquid plastic;

applying a layer of said liquid plastic to a sheet of mylar;

affixing a butterfly wing to said layer of liquid plastic on said sheet of mylar;

10 allowing said layer of liquid plastic to dry;

applying a layer of fixative to an exposed side of said butterfly wing;

allowing said layer of fixative to dry;

applying a first layer of clear lacquer over said layer of fixative;

allowing said first layer of lacquer to dry;

15 cutting along an outer perimeter of said butterfly wing to separate said wing from a
remainder of said mylar sheet;

smoothing said perimeter of said cut-out butterfly wing;

applying a second layer of clear lacquer over said first layer of clear lacquer;

allowing said second layer of lacquer to dry;

20 applying a third layer of clear lacquer over said second layer of clear lacquer;

allowing said third layer of lacquer to dry;

drilling a hole through an end of said butterfly wing, and:

affixing a bail to said hole;

wherein a laminated butterfly wing suitable for use in all manner of jewelry results.

25

ABSTRACT

A multi-layer lamination process for butterfly wings to facilitate their use in jewelry.

The process steps include (1) the mixing of a liquid plastic, (2) the application of a layer of the liquid plastic to a sheet of mylar, (3) affixing a butterfly wing to the liquid plastic/mylar sheet combination, (4) allowing the layer of liquid plastic to dry, (5) the application of a layer of fixative to the exposed side of the butterfly wing, (6) allowing the layer of fixative to dry, (7) the application of a first layer of clear lacquer over the fixative, (8) allowing the first layer of lacquer to dry, (9) cutting along the outer perimeter of the butterfly wing to separate the wing from the remainder of the mylar sheet, (10) smoothing the edges of the cut-out butterfly wing, (11) the application of a second layer of clear lacquer over the first layer, (12) allowing the second layer of lacquer to dry, (13) the application of a third layer of clear lacquer over the second layer, (14) allowing the third layer of lacquer to dry, (15) the drilling of a hole through one end of the laminated butterfly wing, and (16) the affixing of a bail to the hole. The above process uses strong, durable, lightweight materials and may be readily and economically performed to provide for repeated use. When utilized in conjunction with a butterfly wing, the process results in a multi-layered lamination that strengthens and preserves the wing's naturally occurring colors and patterns.

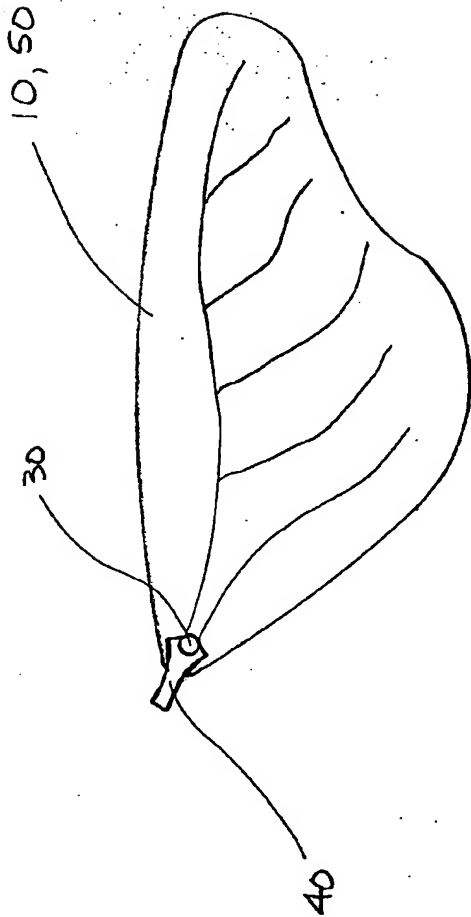


FIG. 1

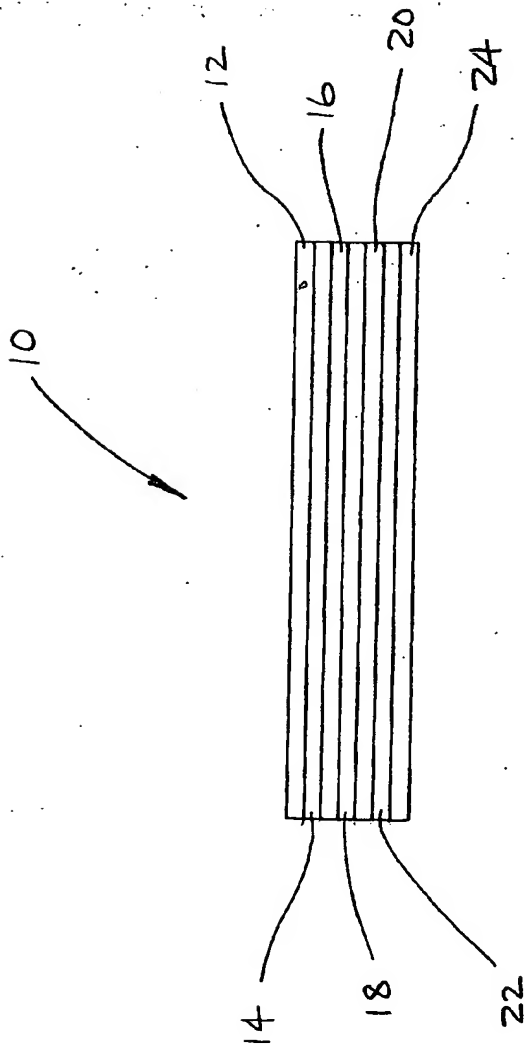


FIG. 2

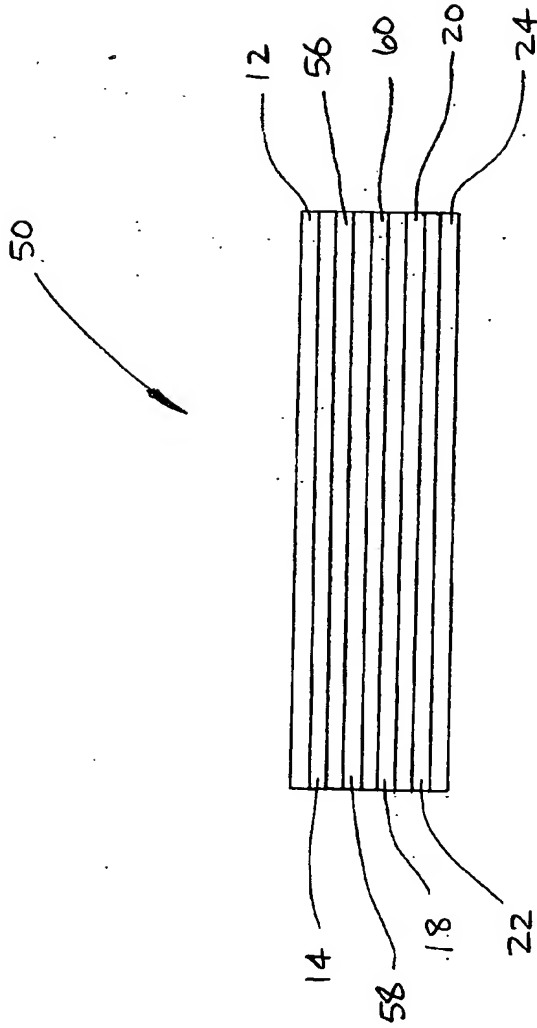


FIG. 3

60476453-060603

Applicant or Patentee: SOUKUP, Michael Attorney's Docket No: SOUKUP-PPA-I
Serial or Patent No.: To be assigned
Filed or Issued: June 6, 2003
For: BUTTERFLY WING LAMINATION PROCESS AND METHOD OF USE

**STATEMENT CLAIMING SMALL ENTITY STATUS
(37 CFR §1.27(a) and 1.27(c)(1)) - INDEPENDENT INVENTOR**

The below named inventor qualifies as an independent inventor as defined in 37 CFR §1.27(a) for purposes of paying reduced fees under sections 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled BUTTERFLY WING LAMINATION PROCESS AND METHOD OF USE described in

☒ the specification filed (herewith) June 6, 2003
☐ provisional application serial no. _____, ☐ patent no. _____, ☐ issued ☐ filed

The below named inventor has not assigned, granted, conveyed or licensed and is under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR §1.27(a)(1) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR §1.27(a)(2) or a nonprofit organization under 37 CFR §1.27(a)(3).

Each person, concern or organization to which the below named inventor has assigned, granted, conveyed, or licensed or is under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below.

☒ no such person, concern, or organization
☐ persons, concerns, or organizations listed below

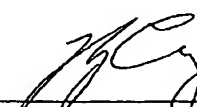
FULL NAME: Michael Soukup
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☒ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NON PROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, new determination of entitlement to small entity status, or notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR §1.27(g)(1)&(2)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made shall be considered as a fraud practiced or attempted on the Office (37 CFR §1.27(h)(1)&(2)), and are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Date June 6, 2003



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